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(54) **CONTENT ACCESS**

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(51) **Int. Cl.**

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H04N 21/45	(2011.01)
H04N 21/454	(2011.01)
H04N 21/482	(2011.01)

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CPC ***H04N 7/163*** (2013.01); ***H04N 5/44543*** (2013.01); ***H04N 21/454*** (2013.01); ***H04N 21/4516*** (2013.01); ***H04N 21/482*** (2013.01)

(58) **Field of Classification Search**

CPC H04N 7/10; H04N 7/163; H04N 21/4532
USPC 725/27, 34, 35, 39
See application file for complete search history.

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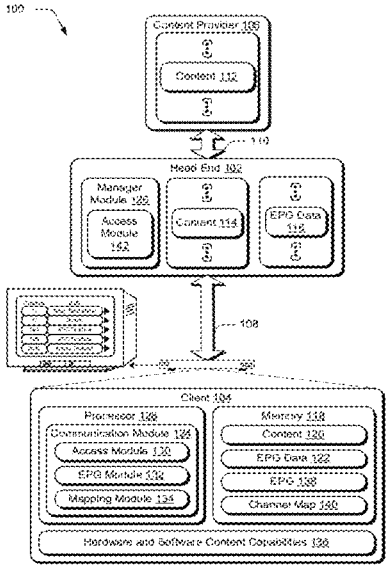
(74) *Attorney, Agent, or Firm* — Ropes & Gray LLP

(57) **ABSTRACT**

Techniques are described to provide content access. In an implementation, a determination is made at a client that a high-definition channel has content that matches content provided by a standard-definition channel. Access is provided to the content via the high-definition channel and access is restricted to the content via the standard-definition channel up the client is capable of outputting the content and high definition.

23 Claims, 9 Drawing Sheets



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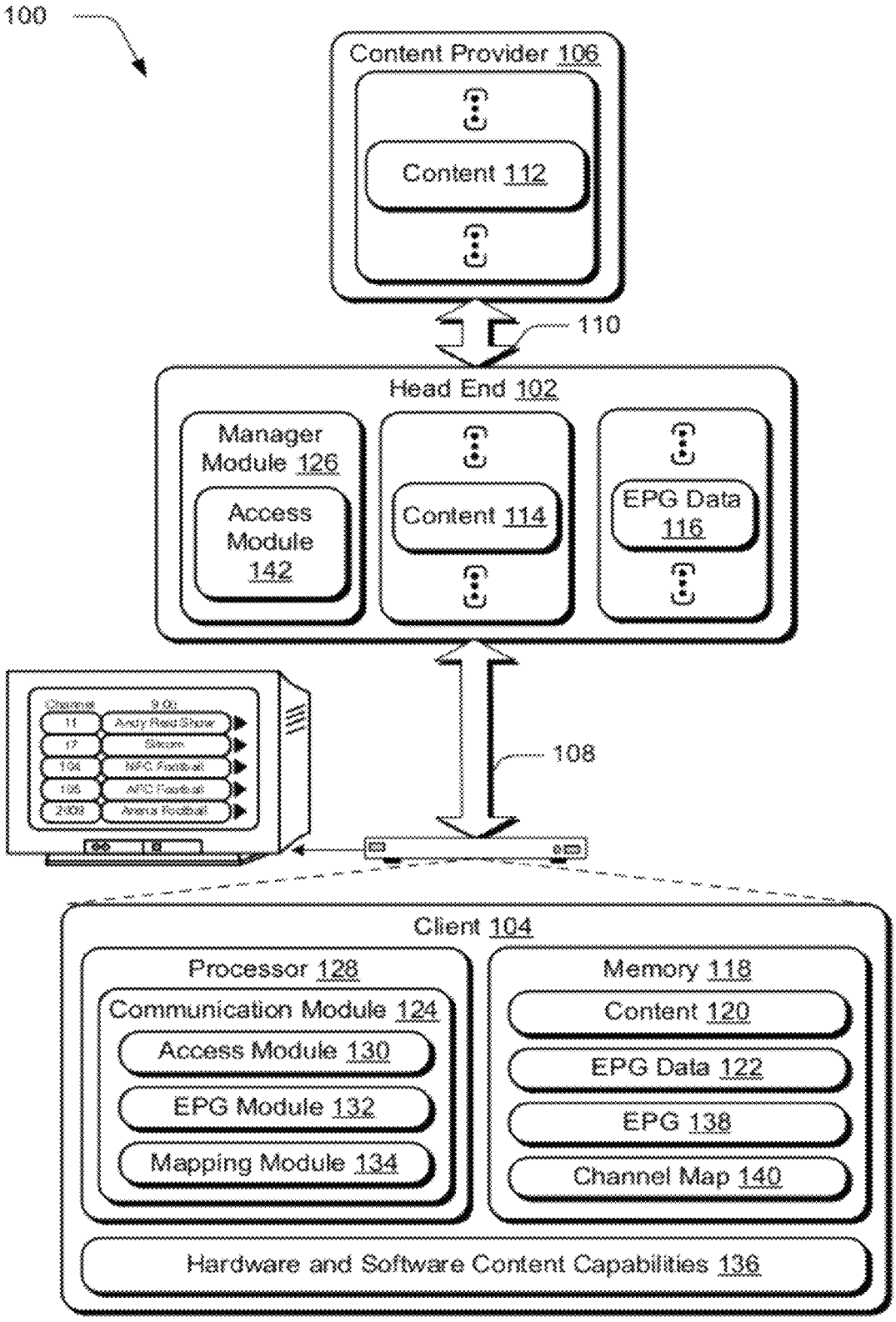
100
Content Provider 106
Content 112
110
Head End 102
Manager Module 126
Access Module 142
Content 114
EPG Data 116
108
Client 104
Processor 128
Communication Module 124
Access Module 130
EPG Module 132
Mapping Module 134
Memory 118
Content 120
EPG Data 122
EPG 138
Channel Map 140
Hardware and Software Content Capabilities 136

Fig. 1

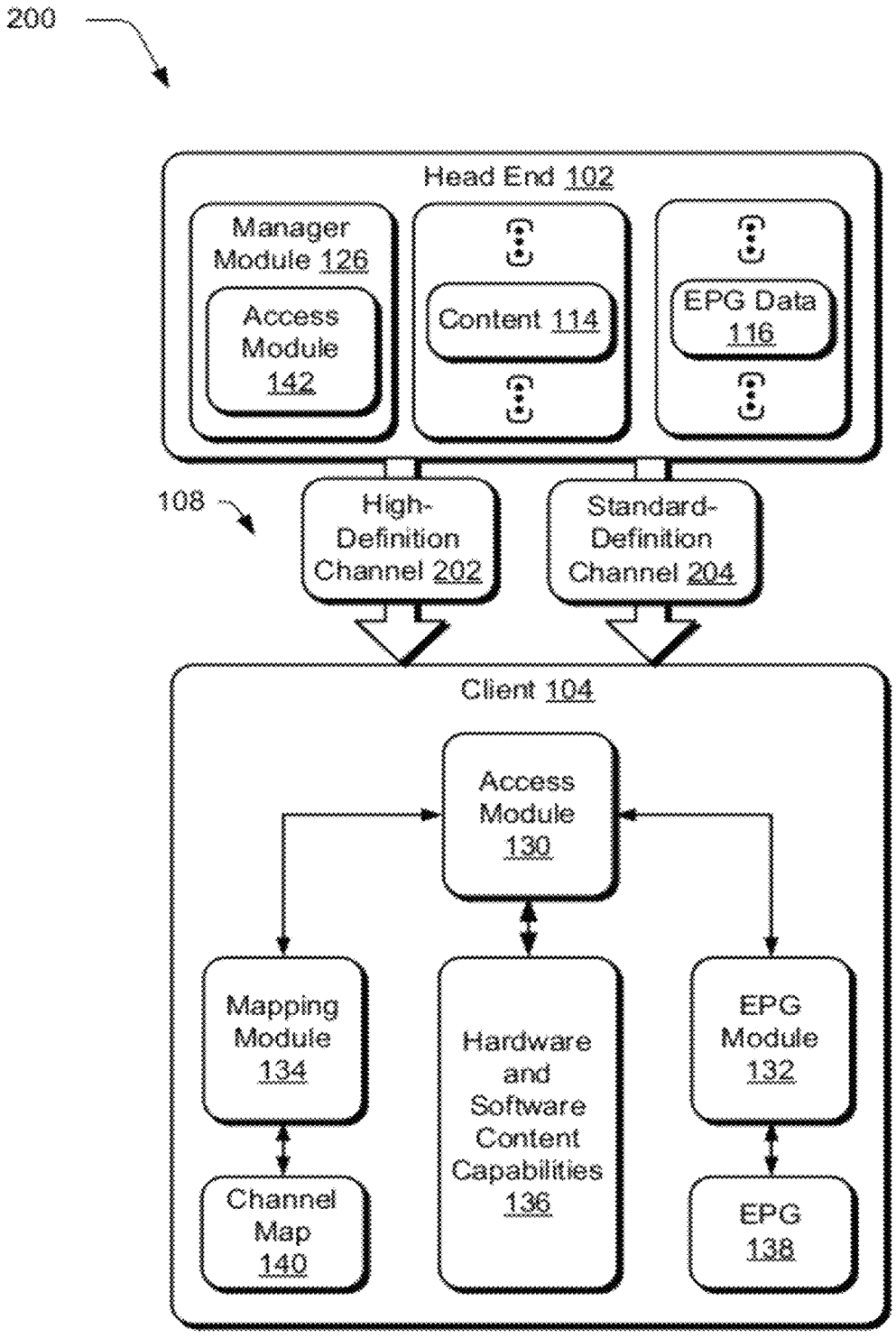
200
Head End 102
Manager Module 126
Access Module 142
Content 114
EPG Data 116
108
High-Definition Channel 202
Standard-Definition Channel 204
Client 104
Access Module 130
Mapping Module 134
Hardware and Software Content Capabilities 136
EPG Module 132
Channel Map 140
EPG 138

Fig. 2

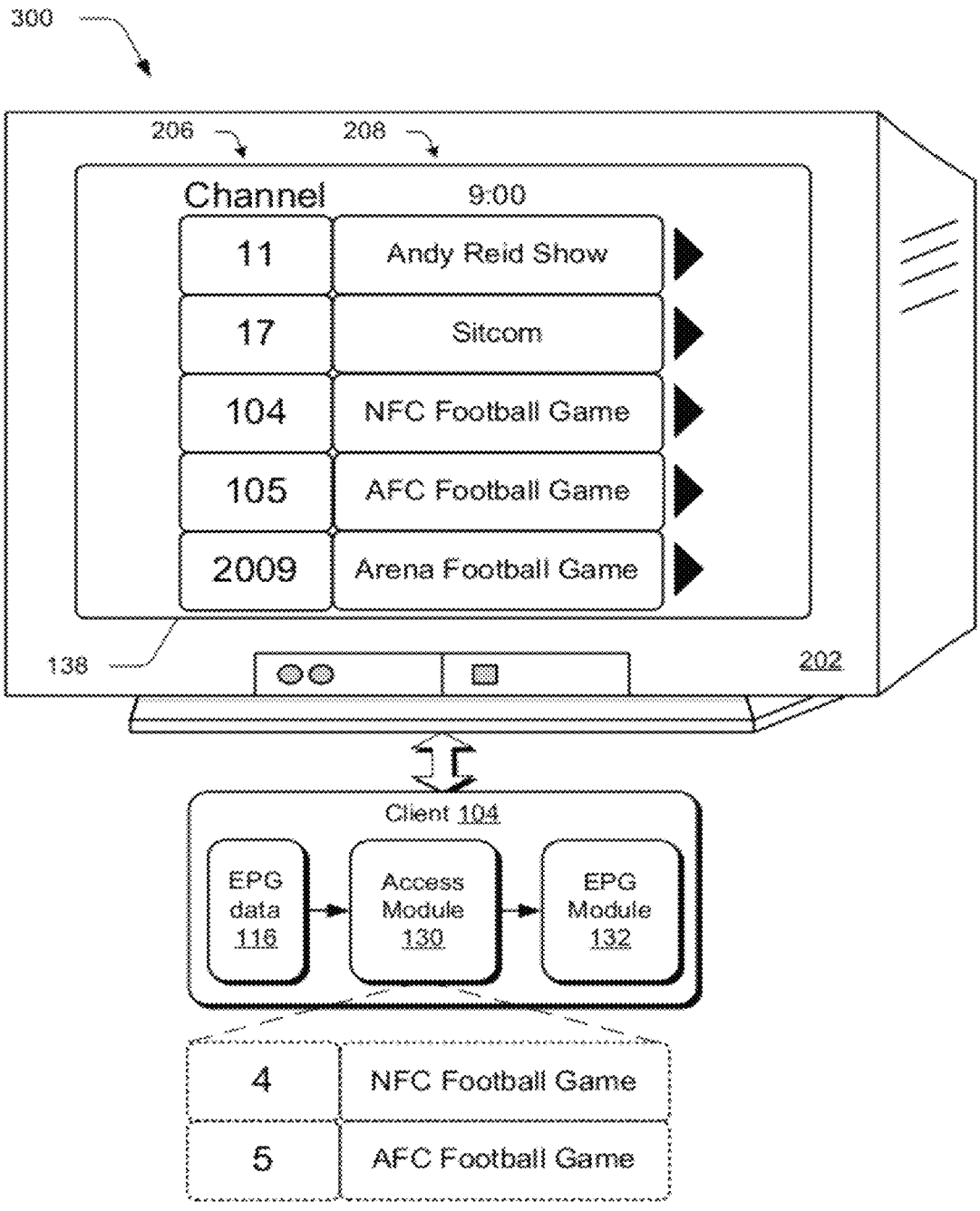
300
206
208
Channel
9:00
11
Andy Reid Show
17
Sitcom
104
NFC Football Game
105
AFC Football Game
2009
Arena Football Game
138
202
Client 104
EPG data 116
Access Module 130
EPG Module 132
4
NFC Football Game
5
AFC Football Game

Fig. 3

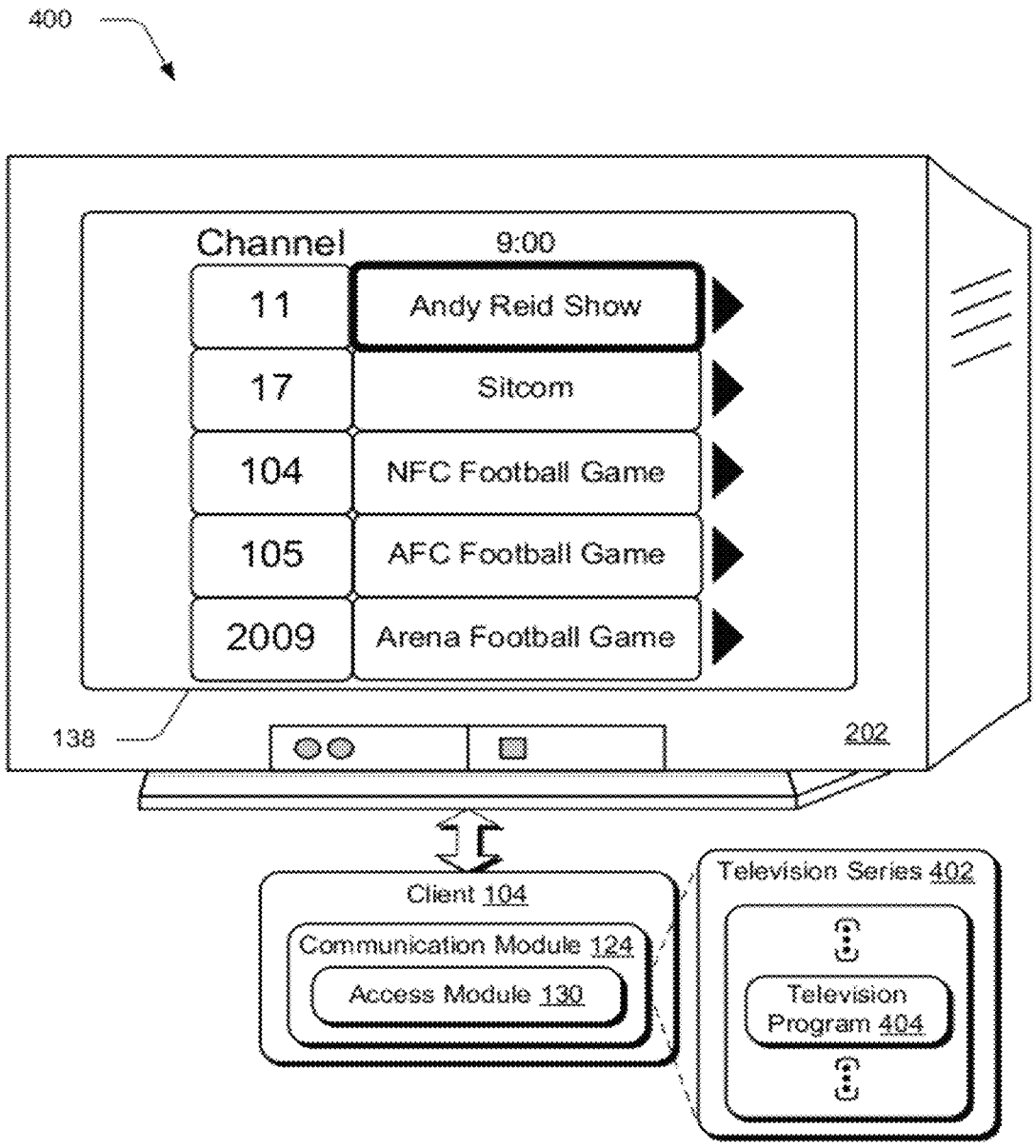
400
Channel
9:00
11
Andy Reid Show
17
Sitcom
104
NFC Football Game
105
AFC Football Game
2009
Arena Football Game
138
202
Client 104
Communication Module 124
Access Module 130
Television Series 402
Television Program 404

Fig. 4

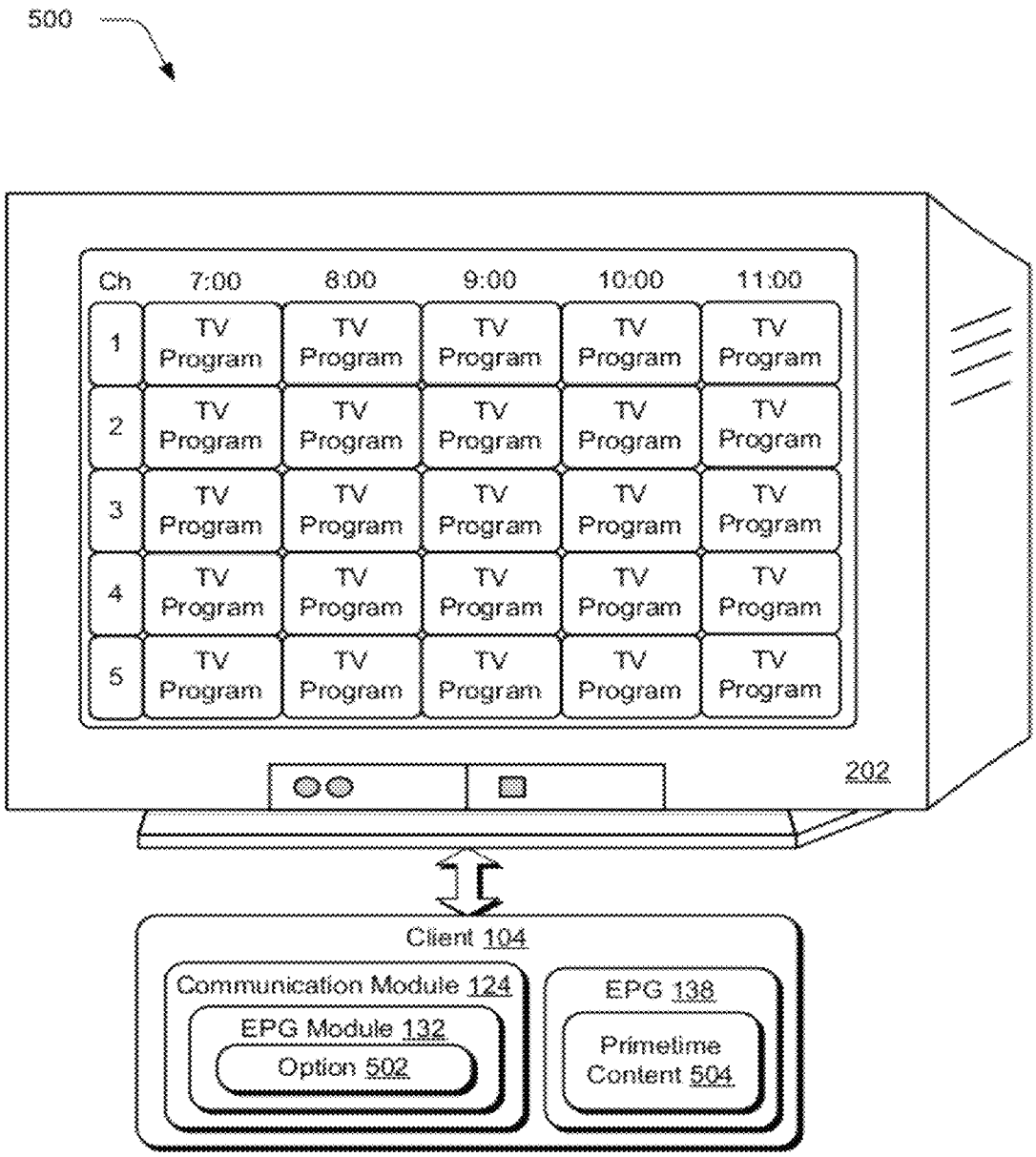
500
Ch
7:00
8:00
9:00
10:00
11:00
1
2
3
4
5
TV Program
202
Client 104
Communication Module 124
EPG Module 132
Option 502
EPG 138
Primetime Content 504

Fig. 5

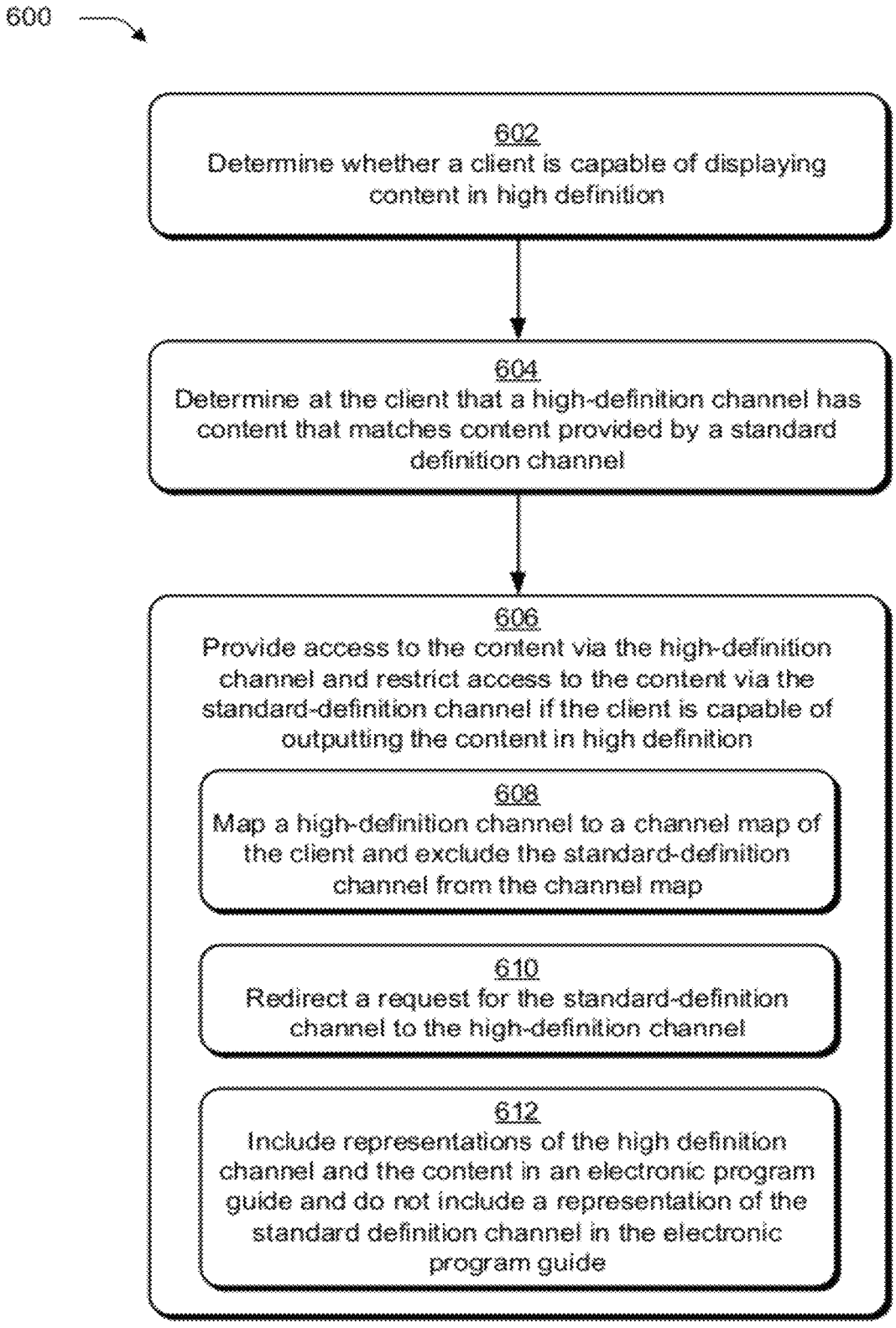
600
602
Determine whether a client is capable of displaying content in high definition
604
Determine at the client that a high-definition channel has content that matches content provided by a standard definition channel
606
Provide access to the content via the high-definition channel and restrict access to the content via the standard-definition channel if the client is capable of outputting the content in high definition
608
Map a high-definition channel to a channel map of the client and exclude the standard-definition channel from the channel map
610
Redirect a request for the standard-definition channel to the high-definition channel
612
Include representations of the high definition channel and the content in an electronic program guide and do not include a representation of the standard definition channel in the electronic program guide

Fig. 6

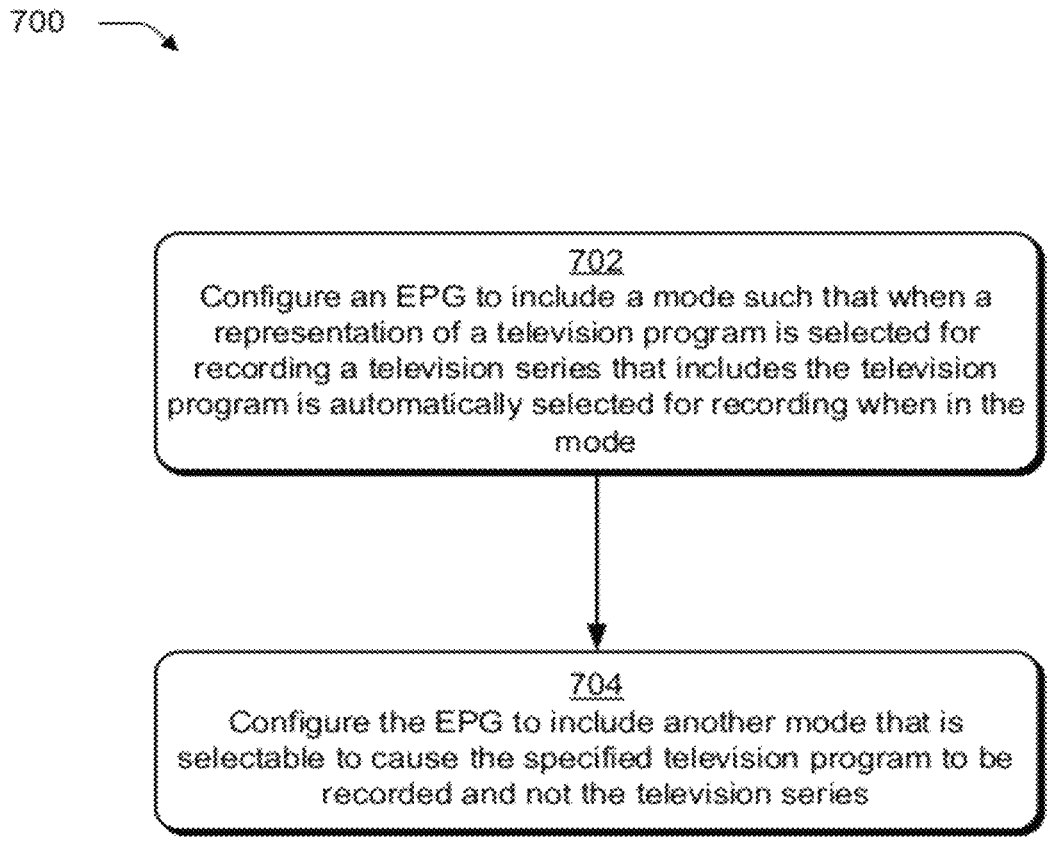
700
702
Configure an EPG to include a mode such that when a representation of a television program is selected for recording a television series that includes the television program is automatically selected for recording when in the mode
704
Configure the EPG to include another mode that is selectable to cause the specified television program to be recorded and not the television series

Fig. 7

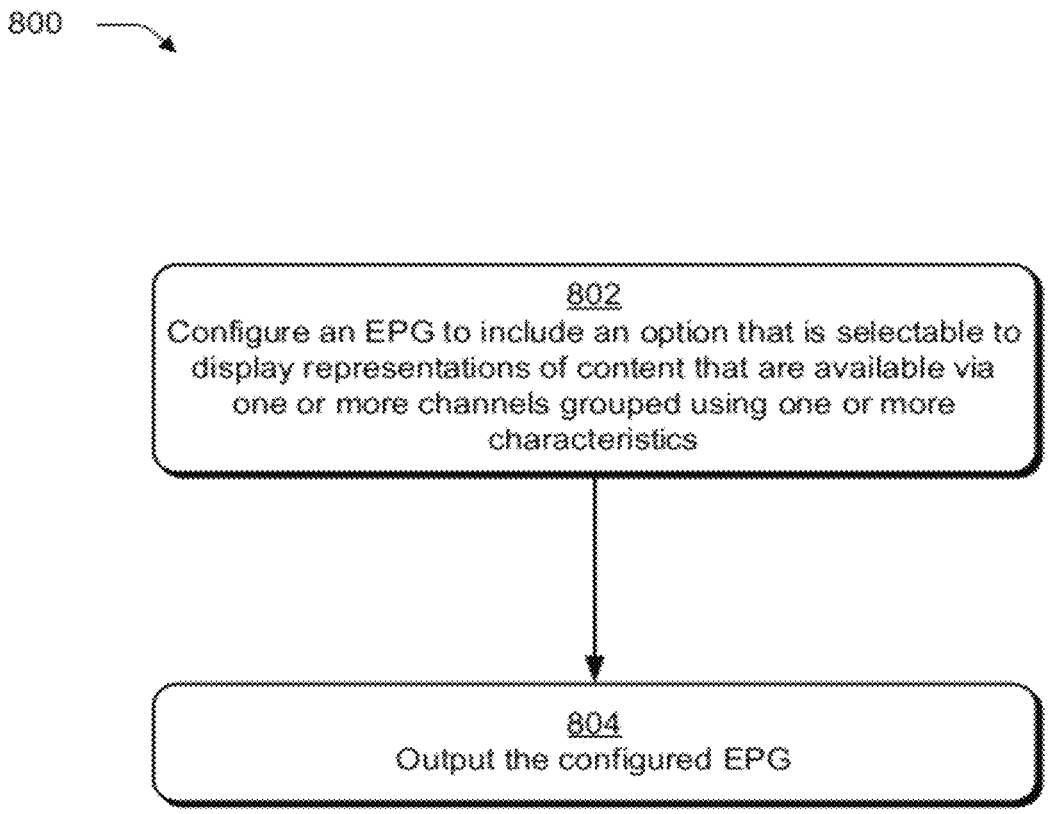
800
802
Configure an EPG to include an option that is selectable to display representations of content that are available via one or more channels grouped using one or more characteristics
804
Output the configured EPG

Fig. 8

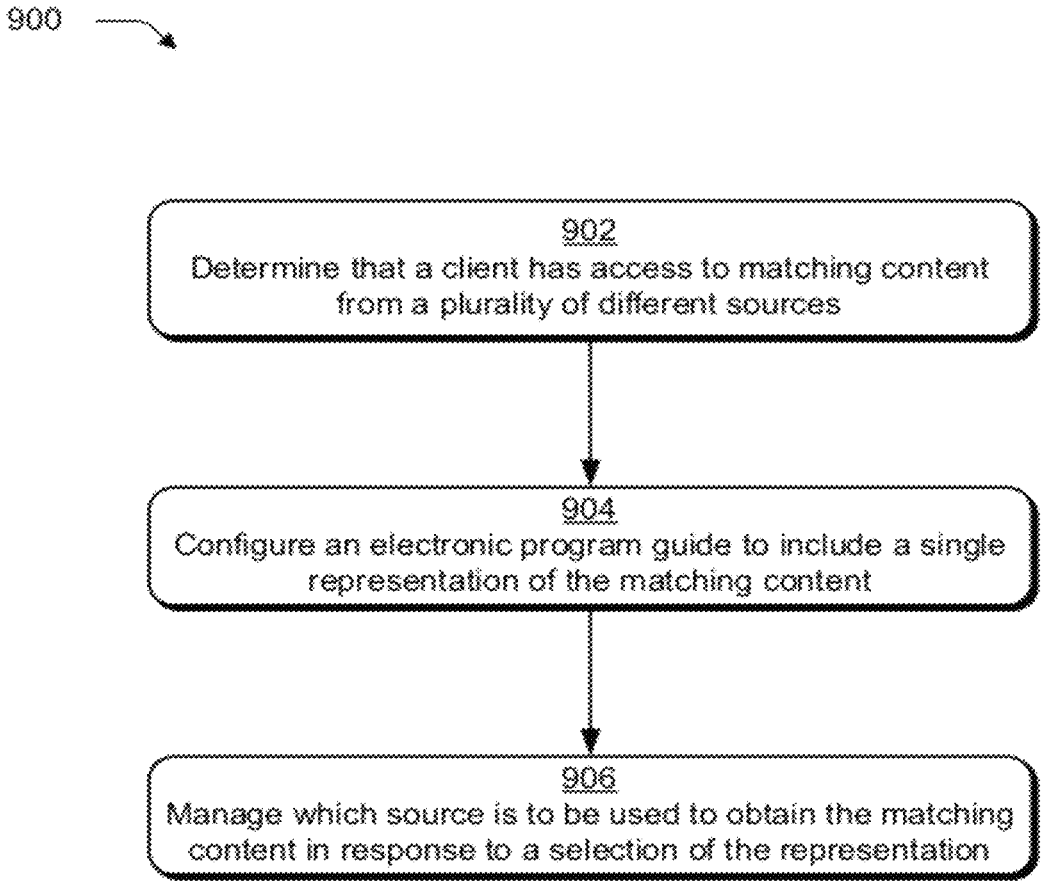
900
902
Determine that a client has access to matching content from a plurality of different sources
904
Configure an electronic program guide to include a single representation of the matching content
906
Manage which source is to be used to obtain the matching content in response to a selection of the representation

Fig. 9

CONTENT ACCESS

RELATED APPLICATIONS

This application claims priority under 35 U.S.C. Section 120 as a continuation of U.S. patent application Ser. No. 12/343,235, filed Dec. 23, 2008, and titled "Content Access," the entire disclosure of which is incorporated by reference.

BACKGROUND

The amount of content that is available to users and the way in which users may access that content is ever increasing. For example, users may access a variety of content from cable and satellite television to streaming content via the Internet. Consequently, users are now able to access hundreds of channels that may have different types of content, such as television programs that may include video-on-demand, movies, sporting events, and so on.

Because of the sheer amount of content that is available to users and the various ways in which the content may be provided (e.g., standard definition versus high definition), however, users may find it difficult to locate particular content of interest. This may be further complicated by the various types of clients that may be used to access the content, such as set-top boxes having personal video recorder functionality that may be difficult to initially set-up. Consequently, users may inadvertently forgo consumption of content that may be of interest to the user due to the difficulty in finding and consuming the content, especially during initial setup of the client.

SUMMARY

Techniques are described to provide content access. In an implementation, a determination is made at a client that a high-definition channel has content that matches content provided by a standard-definition channel. Access is provided to the content via the high-definition channel and access is restricted to the content via the standard-definition channel based on whether the client is capable of outputting the content in high definition.

In an implementation, one or more computer readable media include instructions that are executable at a client to output an electronic program guide having a mode such that when the representation of a television program is selected for recording a television series that includes the television program is automatically selected for recording when in the mode.

In an implementation, one or more computer-readable media include instructions that are executable by a client device to output an electronic program guide having an option that is selectable to display representations of content that are available via one or more channels during primetime exclusively.

This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used as an aid in determining the scope of the claimed subject matter.

BRIEF DESCRIPTION OF THE DRAWINGS

The detailed description is described with reference to the accompanying figures. In the figures, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different instances in the description and the figures may indicate similar or identical items.

FIG. **1** is an illustration of an environment in an example implementation that is operable to employ techniques related to content access.

FIG. **2** depicts a system in an example implementation showing a client of FIG. **1** as receiving separate streams of matching content from the head end of FIG. **1**.

FIG. **3** depicts a system in an example implementation in which an EPG of FIG. **1** is output by the client to control access to content based on capabilities of the client.

FIG. **4** depicts a system in an example implementation in which an access module of FIG. **1** provides functionality to automatically record a television series when a television program in the television series is selected for recording.

FIG. **5** depicts a system in an example implementation in which the access module of FIG. **1** configures the EPG to display content that is to be broadcast during primetime exclusively.

FIG. **6** is a flow diagram depicting a procedure in an example implementation in which access is managed based on capabilities of a client that is to output the content.

FIG. **7** is a flow diagram depicting a procedure in an example implementation in which an EPG is configured to include a mode to cause automatic television series recording.

FIG. **8** is a flow diagram depicting a procedure in an example implementation in which an electronic program guide includes representations of content broadcast during primetime exclusively.

FIG. **9** is a flow diagram depicting a procedure in an example implementation in which a single representation is leverage to manage matching content available from a plurality of sources.

DETAILED DESCRIPTION

Overview

Clients having personal video recorder (PVR) functionality are increasing in popularity due to time shifting functionality. For example, a user may set the client to record favorite television programs using PVR functionality, such as through selection in an electronic program guide (EPG). However, complexity of traditional clients having PVR functionality may be intimidating for some users, especially for a first time user. For instance, users may be confronted with the challenge of learning how to use electronic program guide (EPG), find content that is popular and interesting to record, manage recordings that have already been scheduled, and so on.

Overcoming these challenges may be time-consuming and frustrating to the users. For example, a traditional approach employed by a client having PVR functionality was based on an implicit directive that users were to browse through the EPG to find interesting programs that the users wanted to record on their own. This may be overwhelming for some users and may become more acute as the amount of EPG data that may be delivered to the clients increases. Consequently, the users may be forced to browse through an ever increasing amount of data in an EPG of find particular content of interest. As a result, it may take months before the user has set the client to record each item of content that the user is interested in and thus take full advantage of the PVR functionality of the client.

Techniques are described to provide access to content. In an implementation, one such technique may make it easier for a user to address the challenges described above by leverag-

ing EPG data associated with the content. For example, EPG data may be utilized to locate content that is to be broadcast during primetime to a client. Representations of this content may then be output in an electronic program guide such that a user may more readily locate particular content of interest. For example, a user may select a channel to look at content being aired during primetime on that channel in an EPG and from the EPG setup the recording of one or more items of content, further discussion of which may be found in relation to FIGS. **5** and **8**.

In another implementation, access to the content may be managed based on capabilities of the client to output the content as well as what content is available to the client. For instance, in some instances a high-definition channel may have content that matches content provided via a standard-definition channel, such as when the television network provides content as separate streams via respective channels to broadcast the content in high definition and standard definition. However, inclusion of both channels in an EPG may be duplicative. Consequently, in this implementation access to channels having matching content is granted or restricted based on the capabilities of the client (e.g., capability to output content in high definition). In another instance, a determination may be made that a client has access to matching content from a variety of different sources, such as "over the air," satellite, cable, DSL, and so on. These different sources may be represented using a single representation in a user interface (e.g., an EPG) such that management of which underlying source is used may happen dynamically on a case by case basis. Further discussion of these techniques may be found in relation to FIGS. **3**, **6** and **9**.

In a further implementation, an electronic program guide includes a default mode to cause a client having PVR functionality to be configured to automatically record a television series when a television program is selected for recording. For example, a user may select a particular television program to be recorded that is to be broadcast during a particular time. Because the user may have an increased likelihood of desiring future broadcasts of the particular television program, the client may be automatically configured to record the television series that includes the television program. In this way, a user may quickly setup a client having PVR functionality to record content of interest without manually selecting each individual television program or navigating to another portion of the EPG to specify the television series, further discussion of which may be found in relation to FIGS. **4** and **7**.

In the following discussion, an example environment is first described that is operable to perform techniques that relate to content access. Example procedures are then described that may be employed in the example environment, as well as in other environments. Although these techniques are described as employed within a television environment and electronic program guide in the following discussion, it should be readily apparent that these techniques may be incorporated within a variety of other environments (e.g., other broadcast environments such as radio) using a variety of content without departing from the spirit and scope thereof.

Example Environment

FIG. **1** is an illustration of an environment **100** in an example implementation that is operable to employ techniques related to content access. The illustrated environment **100** includes a head end **102** of a network operator, a client **104** and a content provider **106** that are communicatively coupled, one to another, via network connections **108**, **110**. In the following discussion, the head end **102**, the client **104** and the content provider **106** may be representative of one or more entities, and therefore reference may be made to a single entity (e.g., the client **104**) or multiple entities (e.g., the clients **104**, the plurality of clients **104**, and so on). Additionally, although a plurality of network connections **108**, **110** are shown separately, the network connections **108**, **110** may be representative of network connections achieved using a single network or multiple networks. For example, network connection **108** may be representative of a broadcast network with back channel communication, an Internet Protocol (IP) network, and so on.

The client **104** may be configured in a variety of ways. For example, the client **104** may be configured as a computer that is capable of communicating over the network connection **108**, such as a desktop computer, a mobile station, an entertainment appliance, a set-top box communicatively coupled to a display device as illustrated, a wireless phone, and so forth. For purposes of the following discussion, the client **104** may also relate to a person and/or entity that operate the client. In other words, client **104** may describe a logical client that includes software and/or a device (e.g., a client device having a processor and memory as illustrated).

The content provider **106** includes one or more items of content **112**. The content **112** may include a variety of data, such as television programming, video-on-demand (VOD) files, and so on. The content **112** is communicated over the network connection **110** to the head end **102**. In the following discussion, content may also be referred to as "items of content," "a plurality of content," "particular content," and so on.

Content **112** communicated via the network connection **110** is received by the head end **102** and may be stored as one or more items of content **114**. The content **114** may be the same as or different from the content **112** received from the content provider **106**. The content **114**, for instance, may include additional data for broadcast to the client **104**.

One example of this additional data is illustrated in FIG. **1** as electronic program guide (EPG) data **116**. The EPG data **116** may be configured to describe the content **114** being broadcast by the head end **102**, such as a time of broadcast (e.g., "airing"), genre, format (e.g., high definition versus standard definition), actors, director, title, and so on. The EPG data **116** may be obtained from an EPG database for broadcast to the client **104**. Distribution from the head end **102** to the client **104** may be accommodated in a number of ways, including cable, radio frequency (RF), microwave, digital subscriber line (DSL), satellite, via Internet Protocol (IP) connection, and so on. Although the EPG data **116** is illustrated as being provided by the head end **102** for the sake of simplicity of the figure, it should be readily apparent that the EPG data **116** may originate from a wide variety of sources, such as a standalone third-party provider (e.g., a website).

The client **104**, as previously stated, may be configured in a variety of ways to receive the content **114** and the EPG data **116** over the network connection **108**. The client **104** typically includes hardware and software to transport and decrypt content **114** and the EPG data **116** received from the head end **102** for rendering by the illustrated display device. Although a display device is depicted in FIG. **1**, a variety of other output devices are also contemplated, such as speakers.

The client **104** may also include personal video recorder (PVR) functionality. For instance, the client **104** may include memory **118** to record content **114** and EPG data **116** as content **120** and EPG data **122**, respectively. The memory **118** may be configured in a variety of ways, such as a hard disk drive, a removable computer-readable medium (e.g., a writable digital video disc), semiconductor based memory, and so on. Thus, content **120** that is stored in the memory **118** of the client **104** may be copies of the content **114** that was streamed from the head end **102**.

The client **104** includes a communication module **124** that is executable on the client **104** to control content output, such as through the use of one or more "command modes" to tune to a particular channel, order pay-per-view content, and so on. The command modes may also provide PVR functionality such as to provide non-linear playback of the content **120** (i.e., time shift the playback of the content **120**) such as pause, rewind, fast forward, slow motion playback, and the like which is sometimes referred to as "trick modes".

The head end **102** is illustrated as including a manager module **126**. The manager module **126** is representative of functionality to configure content **114** for output (e.g., streaming) over the network connection **108** to the client **104**. The manager module **126**, for instance, may configure content **112** received from the content provider **106** to be suitable for transmission over the network connection **108**, such as to "packetize" the content **112** for distribution over the Internet, configuration for a particular broadcast channel, map the content **112** to particular channels for broadcast, and so on.

Thus, in the environment **100** of FIG. **1**, the content provider **106** may broadcast the content **112** over a network connection **110** to a multiplicity of network operators, an example of which is illustrated as head end **102**. The head end **102** may then stream the content **114** over a network connection **108** to a multitude of clients, an example of which is illustrated as client **104**. The client **104** may then store the content **114** in the memory **118** as content **120** (such as when the client **104** is configured to include personal video recorder (PVR) functionality) and/or render the content **114** immediately for output as it is received.

The client **104** is illustrated as executing the communication module **124** on a processor **128**, which is also storable in memory **118**. Processors **128** are not limited by the materials from which they are formed or the processing mechanisms employed therein. For example, processors may be comprised of semiconductor(s) and/or transistors (e.g., electronic integrated circuits (ICs)). In such a context, processor-executable instructions may be electronically-executable instructions. Additionally, although a single memory **118** is shown for the client **104**, a wide variety of types and combinations of memory may be employed, such as random access memory (RAM), hard disk memory, removable medium memory, and other types of computer-readable media.

The communication module **124** is also illustrated as including an access module **130**, an EPG module **132**, and a mapping module **134**. The access module **130** is representative of functionality to manage access to content. In an implementation, this access may be managed at the client **104** based on hardware and software content capabilities **136** of the client **104** to output content **114**. For instance, the hardware and software content capabilities **136** may support high-definition output, e.g., video and/or audio. Accordingly, the access module **130** may grant access to the high-definition content and restrict access to standard-definition content when matching content is available to the client **104**.

For example, the access module **130** may communicate with the EPG module **132** to form an EPG **138** that includes representations of content. Additionally, inclusion of representations in the EPG **138** may be based on the hardware and software content capabilities **136**. When the client **104** includes hardware and software content capabilities **136** to display high definition content, for instance, the EPG **138** may be formed to include representations of content **114** that is provided via high-definition channels and not that matching content that is provided via one or more standard-definition channels.

In another example, the access module **130** may communicate with a mapping module **134** to form a channel map **140**. The channel map **140** may be utilized by the communication module **124** to control which channels are available to a user, e.g., such as via "channel up" or "channel down" control functions, by typing in a numerical identifier of the channel, and so on. Accordingly, when the client **104** includes hardware and software content capabilities **136** to display high-definition content, the channel map **140** may be formed such that the high-definition channels and not the standard-definition channels that provide matching content are available. Thus in this instance the user is automatically provided access to high-definition channels, which may be provided even in an instance in which the user requests a standard-definition channel (e.g., by redirecting), further discussion of which may be found in relation to FIG. **6**.

Although the functionality of the access module **130** has been discussed at the client **104**, the functionality may be incorporated throughout the environment **100** of FIG. **1** and elsewhere such as at a standalone website. For example, the head end **102** may incorporate this functionality as represented by access module **142** to form the EPG **138** and/or channel map **140** for communication to the client **104** over the network connection **108**.

Thus, as described above the access module **130** may leverage EPG data **116** that describes content **114** in a variety of ways to manage content access. For example, the access modules **130**, **142** may form logical groupings around popular content, primetime content and other logical groupings of content to help a user setup a recording for favorite content. This may be performed by the access modules **130**, **142** through filtering and/or consolidating the EPG data **122** to present options to a user to setup recordings. For example, the user may select a channel in the EPG **138** and look at representations of the television programs to be broadcast (i.e., "aired") during primetime on that channel. The user may then setup the recordings from the EPG **138** by selecting representations of those television programs. This example may be extended to a movie portal when the user wants to schedule recording of movies by presenting the user with information about upcoming movies.

In another example, the access module **142** may create a multi-dimensional list of popular content and deliver the list to the client **104** via the network connection **108**. This list may then be presented to the user to schedule recordings. For instance, a user may be provided with a list (e.g., through the EPG **138**) of the twenty most popular television programs being broadcast by the head end **102**. The user could select the television programs from this list to cause the communication module **124** to record those television programs to memory **118** (e.g., included as content **120**) using PVR functionality. Other groupings are also contemplated, such as groupings of late night talk shows, daytime talk shows, children's programming, newly-broadcast content, "by channel," and so on. In this way, a user interested in the represented content in the EPG **138** may be presented with a selection of content that falls in that group and quickly setup the recordings.

These techniques may support a variety of different user scenarios. In a first time user scenario, for instance, a user subscribes to the service provided by a network operator of the head end **102**. A service technician from the network operator may setup the client **104** at a customer's location (e.g., the customer's house) to receive content **114** via the network connection **108** from the head end **102**. When the client **104** is first switched on, EPG data **116** that specifies popular content may be downloaded to the client **104** via the network connection **108**. The client **104** may then present an

option to guide the user through a recordation process. Selection of the option may cause the client **104** to "walk the user" through this process to setup recordings.

In an experienced user scenario, the user may leverage these techniques to manage recordings from a central location in the EPG **138**. For instance, the EPG **138** (when so configured) may provide an efficient tool for users to setup recordings of popular content, primetime content, and so on from these groupings. The previous techniques may also be configured to inform the user of scheduling conflicts, enable a user to set a recording for content that is no longer being broadcast in the hope of a broadcast being performed in the future, and so on.

It should be noted that one or more of the entities shown in FIG. **1** may be further divided (e.g., the head end **102** may be implemented by a plurality of servers in a distributed computing system), combined (e.g., the head end **102** may incorporate functionality of the content provider **106**), and so on. Thus the environment **100** of FIG. **1** is illustrative of one of a plurality of different environments that may employ the described techniques.

Generally, any of the functions described herein can be implemented using software, firmware, hardware (e.g., fixed-logic circuitry), manual processing, or a combination of these implementations. The terms "module", "functionality", "engine" and "logic" as used herein generally represent software, firmware, hardware, or a combination thereof. In the case of a software implementation, for instance, the module, functionality, or logic represents program code that performs specified tasks when executed on a processor (e.g., CPU or CPUs). The program code can be stored in one or more computer-readable memory devices, such as the memory **118**. The features of the content access techniques are platform-independent, meaning that the techniques may be implemented on a variety of commercial computing platforms having a variety of processors.

FIG. **2** depicts a system **200** in an example implementation showing the client **104** as capable of receiving separate streams of matching content from the head end **102**. The head end **102** is illustrated as being configured to stream content **114** to the client **104** over the network connection **108**. The network connection **108** includes a high-definition channel **202** and a standard-definition channel **204** to stream the content **114** to the client **104**.

In the illustrated system **200**, the access module **130** of the client **104** is configured to determine the hardware and software content capabilities **136** of the client **104**. This determination may be performed in a variety of ways, such as by querying a driver of the client **104** (e.g., to determine which software and/or hardware is available on the client), to locate a preconfigured identifier that indicates the capabilities of the client **104**, based on an input received from a user to interaction with the user interface output by the client **104** (e.g., to specify whether a television connected to a set-top box supports high definition), and so on.

The access module **130** may then manage access to the content **114** based on the determination. For example, the access module **130** may review the EPG data **116** to determine which channels have matching content **114**. The access module **130** may also determine that the hardware and software content capabilities **136** of the client **104** did not support a high-definition output. Accordingly, the access module **130** may communicate with the mapping module **134** to include the standard-definition channel **204** in the channel map **140** and not the high-definition channel **202**. In this way, the access module **130** may restrict access to the high-definition channels **202** and permit access to the standard-definition channel **204**.

In another example, the access module **130** may communicate with the EPG module **138** to form the EPG **13** such that representations of the standard-definition channels **204** included representations of the high-definition channels **202**. Thus in this example the EPG **138** is not cluttered with representations of high-definition channels that could not be output by the client **104** based on the hardware and software content capabilities **136** of the client **104**. In an implementation, a single representation may be output that, when selected, causes the access module **130** to dynamically select a stream on a case-by-case basis.

For example, the access module **130** may make a dynamic determination based on what streams are currently being used. For instance, a house may support two high-definition streams and two additional standard definition streams at any one time. If both high-definition streams are "in use" in other parts of the house, the access module **130** may perform the following actions. First, when a request is received for a channel having content that is available in high definition (HD) and standard definition (SD) versions, the access module may determine that both available HD streams are in use. The access module **130** may then determine that an SD version is available and tune to the SD version. The access module may also inform a user that the SD stream is being viewed since HD stream is not available. In an implementation, when the HD stream becomes available, the access module **130** may automatically tune to that stream.

The access module **130** may also perform similar techniques when scheduling future recordings. If each available HD stream is reserved for other scheduled recordings, the access module **130** may "fall back" to using the SD stream instead. Additionally, the access module **130** may output a user interface to explain the current circumstances of the recording and offer options to the user, such as to switch resolutions of the scheduled recordings. A variety of other examples are also contemplated, further discussion of which may be found in relation to the following figure.

FIG. **3** depicts a system **300** in an example implementation in which the EPG **138** is output by the client **104** to control access to content based on capabilities of the client **104**. The access module **130** is illustrated as processing EPG data **116** that was received from the head end **102** in FIG. **1**. During this processing, the access module **130** may determine which channels provide matching content, e.g., the same television programs. The access module **130** may then communicate a listing to the EPG module **132** of television channels to be used to form the EPG **138** which is illustrated as being output on a display device **202** communicatively coupled to the client **104**.

The illustrated EPG **138** is shown as having a first column of representations **206** of channels and a second column of representations **208** of content that is available via the respective channels at a particular point in time. In this example, the access module **130** may determine that channel 4 and channel 104 include matching content, which in this instance is an NFC football game. Likewise, the access module **130** may also determine that channels 5 and 105 include matching content, which in this instance is an AFC football game. Thus, even though the content is to be displayed in different resolutions the content itself that is to be displayed matches e.g., is the same item of content such as a television program, a radio show, and so on.

In this instance, the access module **130** may determine that the hardware and software content capabilities **136** of the

client **104** support high definition output. Accordingly, access module **130** may communicate this information to the EPG module **132** such that representations of the high-definition channels (e.g., channels 104 and 105) and the respective content available via those channels is output in the EPG **138**, thereby giving access to those channels. The access module **130** may also exclude standard-definition channels (e.g., channels 4 and 5) and representations of the respective content available via those channels from being output in the EPG **138**, which is illustrated in FIG. **3** through the use of phantom lines.

In an implementation, the representations may be configured to provide a consistent user experience. For example, Channels 4 and 5 may have existed for decades and are therefore familiar to the user. However, channels 104 and 105 may be recent creations to provide HD content. Therefore, the EPG may be configured to output representations of channels 4 and 5, but redirect requests for the represented content of those channels to the respective HD channels. Thus, in this example channels 4 & 5 (and not channels 104 and 105) appear in the EPG. "Behind" those channel the access module **130** may route requests for that content as described above, as well as to other sources, such as an OTA (over the Air) source, video-on-demand (VOD) source, and so on. A variety of other techniques may also be used to permit and restrict access to channels based on the capabilities of the client **104**, further discussion of which may be found in relation to FIG. **6**.

FIG. **4** depicts a system **400** in an example implementation in which the access module **130** provides functionality to automatically record the television series **402** when a television program **404** in the television series **402** is selected for recording. In the illustrated example, a television program "Andy Reid Show" is selected in the EPG **138** for recording. This selection may be performed in a variety of ways, such as through use of a cursor control device.

In response to the selection, the access module **130** may determine whether the selected television program **404** is included in a television series **402**. For example, the access module **130** may utilize the EPG data **116** to make this determination. When the television program **404** is included in a television series **402**, the access module **130** may configure PVR functionality of the client **104** to record the television series **402**. In an implementation, this functionality to automatically record the television series **402** is implemented as a default mode. In this way, future episodes in the television series **402** of a television program **404** may be automatically recorded and thus aide a user in setup of the client **104** as previously described. Further discussion of recordation of a television series **402** may be found in relation to FIG. **7**.

FIG. **5** depicts a system **500** in an example implementation in which the access module **130** configures the EPG **138** to display content that is to be broadcast during primetime exclusively. In the illustrated system **200**, the EPG module **132** is configured to provide an option **502** to form an EPG **138**. The EPG **138** is configured in accordance with the option **502** to output representations of primetime content **504** exclusively in the EPG **138**.

As illustrated in a display of the EPG **138** on the display device **202** of FIG. **5**, representations of content are illustrated for channels one through five between the times of 7 and 11 p.m. Although in this implementation representations for the entirety of primetime are displayed together for channels one through five, it should be readily apparent that other implementations are also contemplated, e.g., navigating to representations displayed "off screen." Further discussion of configuring an EPG to display representations of primetime content may be found in relation to FIG. **8**.

Example Procedure

The following discussion describes content access techniques that may be implemented utilizing the previously described environment, systems and devices. Aspects of each of the procedures may be implemented in hardware, firmware, or software, or a combination thereof. The procedures are shown as a set of blocks that specify operations performed by one or more devices and are not necessarily limited to the orders shown for performing the operations by the respective blocks. In portions of the following discussion, reference will be made to the environment **100** of FIG. **1** and systems **200-500** of FIGS. **2-5**, respectively.

FIG. **6** depicts a procedure **600** in an example implementation in which access is manage based on capabilities of a client that is output the content. A determination is made as to whether a client is capable of displaying content in high definition (block **602**). For example, the access module **130** of the communication module **124** may query the hardware and software content capabilities **136** of the client **104**. This query may be performed in a variety of ways, such as via a investigating drivers stored in memory **118** of the client **104**, an identifier input by a user of the client **104** (e.g., to identify a specific display device communicatively coupled to the client **104**), and so on.

A determination is made at the client **104** that a high-definition channel **202** has content that matches content provided by standard-definition channel **204** (block **604**). For instance, the access module **130** may examine EPG data **116** to determine that the high-definition channel **202** streams content that matches the content streamed on the standard-definition channel **204**. In another example, the determination may be based on an identification of the content provider **106** (e.g., call letters). A variety of other examples are also contemplated without departing from the spirit and scope thereof.

Access to the content is provided via the high-definition channel and access to the content via the standard-definition channel is restricted if the client is capable of outputting the content in high-definition (block **606**). As previously described, this access may be managed in a variety of ways. For instance, the high-definition channel may be mapped to channel map of the client and the standard-definition channel may be excluded from the channel map (block **608**).

In another instance, a request for the standard-definition channel may be redirected to the high-definition channel (block **610**). For example, the client **104** of FIG. **3** may support output of high-definition content. Accordingly, the client **104** may redirect the request for channel 4 (e.g., the standard definition content available via a standard-definition channel) to channel 104, which matches the content of channel 4 but is provided in high definition. As previously described, the redirection may be performed "behind the scenes" such that a user is unaware of the redirection.

Representations of the high-definition channel and the content are included in an electronic program guide that does not include a representation of the standard-definition channels in the electronic program guide (block **612**). Returning again to FIG. **3**, the representations of the high-definition channel (e.g., channel 104) and the content available via that channel (e.g., NFC football game) are displayed in the EPG **138**. However, the representation of the standard-definition channel (e.g., channel 4) is not displayed in the EPG **138**. Thus, clutter which may be caused by repeating representations of content (e.g., the NFC football game twice) and/or the representation of the standard-definition channel is removed from the EPG **138** in this example.

FIG. **7** depicts a procedure **700** in an example implementation in which an EPG is configured to include a mode to

cause automatic television series recording. An EPG is configured to include a mode such that when a representation of a television program is selected for recording, a television series that includes a television programs automatically selected for recording when in that mode (block **702**). For example, the EPG **138** of FIG. **4** may be configured such that the mode is a default mode. When in the default mode, if the user selects a particular television program (e.g., the Andy Reid show), the access module **130** may be configured to include a television series **402** that includes the television program **404**. In this way, future episodes of the television program **404** may be automatically recorded by the client **104** using PVR functionality of the client coming e.g., such as to record the content **120** to memory **118** of the client **104**.

The automatic recordation may be performed directly by the access module **120** without further input from a user and/or indirectly by querying the user. For example, the access module **130** may output a confirmation screen such that a user may confirm that the television series is to be recorded. In another example, the access module **130** may provide an option to rank recordation of the television series **404** in relation to other television series that were previously scheduled for recording to resolve conflicts between the television series and more particularly episodes of television programs included in the television series.

The EPG may also be configured to include another mode is selectable to cause the specified television program to be recorded and not the television series (block **704**). For example, the EPG **138** may be configured to include another mode to switch out of the previously described a default mode such that a television series is not automatically recorded. In this way, a user may set up the client **104** when initially received for recording of the television series. After a while, however, the user may have the client **104** configured as desired for recordation of content and therefore switch out of this default mode to record particular television programs of interest and not each future episode of the television series, e.g., such as to conserve space in the memory **118** of the client **104**. A variety of other examples are also contemplated, such as through provision of the mode to record the television series but not in a default mode as previously described.

FIG. **8** depicts a procedure **800** in an example implementation in which an electronic program guide includes representations of content broadcast during primetime exclusively. An EPG is configured to include an option that is selectable to display representations of content that are available via one or more channels grouped using one or more characteristics (block **802**). For example, the option may be selectable to cause the EPG to output representations of content that is available via primetime exclusively. Primetime may be defined in a variety of ways and may differ based on geographic location, e.g., primetime in the central time zone may defined as between 7-10 whereas primetime in the Pacific time zone may be defined as occurring between 8-11. The configured EPG is then output (block **804**).

For example, the option may be made available in the EPG **138**, e.g., via selection in a drop-down menu, a display of a button, a key combination, and so on. The option, when selected, may cause the EPG **138** to exclude representations of content that is not available via a broadcast during primetime at the client **104**, e.g., as indicated by the EPG data **116**. For instance, the access module **130** in conjunction with the EPG module **132** may configure the EPG **138** to output representations of content that is to be broadcast between the hours of 7 and 11 p.m. to the client **104**. In this way, a user may readily navigate the representations of content that are more likely to be of interest to the user as targeted by a network operator (e.g., an operator of the head end **102**) and/or the content provider **106**. As previously described, a variety of other logical groupings are also contemplated. For example, options may be output to filter the EPG data **116** to display representations of content such as daytime soap operas, late-night talk shows, and so on as previously described in relation to FIG. **1**.

FIG. **9** depicts a procedure **900** in an example implementation in which a user interface is configured to include a single representation of matching content that is available via a plurality of sources. A determination is made that a client has access to matching content from a plurality of different sources (block **902**). For example, as previously described the client **104** may have access to a high-definition channel **202** and a standard0defintiion channel **204** from a head end **102**. The client **104** may also have access to the matching content from different providers, such as an "over the air" broadcast, cable, satellite, video-on-demand (VOD).

An electronic program guide is configured to include a single representation of the matching content (block **904**) such that management may be performed as to which of the plurality of sources is used to obtain the matching content in response to a selection of the representation. Thus, this management may be performed dynamically in response to the selection.

For example, a user may select a representation of a particular sporting event that is available from a variety of sources, such as an over-the-air broadcast, via VOD, and via different channels from a head end **102** (e.g., standard and high definition), and so on. The access module **130** may then manage which stream will be sued to provide the content represented in the EPG, such as whether a stream is available (e.g., the household example above), based on cost, capabilities of the client **104**, and so on. Further, this management may be performed dynamically in response to the request to address changing considerations, e.g., whether an HD stream has become available in a household. A variety of other examples are also contemplated.

CONCLUSION

Although the invention has been described in language specific to structural features and/or methodological acts, it is to be understood that the invention defined in the appended claims is not necessarily limited to the specific features or acts described. Rather, the specific features and acts are disclosed as example forms of implementing the claimed invention.

What is claimed is:

1. A method implemented by a client device, the method comprising:

determining hardware and software content capabilities of the client device;

outputting a representation of content that is available via a plurality of different sources at a same time;

selecting, in response to a user selection of the representation, one of the plurality of different sources to be used to obtain the content, wherein the selecting is based at least in part on the determined capabilities of the client device and availability of the plurality of different sources when the user selection is received; and

responsive to a particular source becoming available, automatically accessing the particular source when it becomes available.

2. A method as described in claim **1**, wherein the determining of the hardware and software content capabilities of the client device is performed by querying a driver.

3. A method as described in claim 1, wherein the plurality of different sources includes different channels from a head end.

4. A method as described in claim 1, wherein the determining of the hardware and software content capabilities of the client device is performed by locating a preconfigured identifier that indicates the capabilities of the client device.

5. A method as described in claim 1, wherein the content is available via standard definition and high definition.

6. A method as described in claim 1, wherein the content is a matching media asset.

7. A non-transitory computer-readable medium having instructions thereon for storing a series of media assets, the instructions comprising:

instructions for generating for display a media guidance application having a mode such that when a representation of a media asset is selected for storing, the media asset is stored and a series that includes the media asset is automatically selected for storing when in the mode.

8. The non-transitory computer-readable medium as described in claim 7, wherein the representation of the media asset is selectable via an input to cause the storing of the series.

9. The non-transitory computer-readable medium as described in claim 7, wherein the mode is a default mode of the media guidance application.

10. The non-transitory computer-readable medium as described in claim 7, wherein the media guidance application includes another mode that is selectable to cause the selected media asset to be stored and not the series.

11. The non-transitory computer-readable medium as described in claim 7, further comprising instructions for causing a confirmation to be displayed to confirm that the series is to be stored.

12. The non-transitory computer-readable medium as described in claim 7, further comprising instructions for causing an option to be displayed to rank the series in relation to one or more other series that are scheduled to be stored to resolve storing conflicts.

13. A non-transitory computer-readable medium having instructions thereon for a content source, the instructions comprising:

instructions for determining hardware and software capabilities of a client device;

instructions for causing a media guidance application to output a representation of content that is available via a plurality of different sources at a same time;

instructions for selecting, in response to a user selection of the representation, one of the plurality of different sources to be used to obtain the content, wherein the selecting is based at least in part on the determined capabilities of the client device and availability of the plurality of different sources when the user selection is received; and

instructions for, responsive to a particular source becoming available, automatically accessing the particular source when it becomes available.

14. The non-transitory computer-readable medium as described in claim 13, wherein the instructions for causing the media guidance application to output a representation of content causes the media guidance application to output representations of content available during primetime.

15. The non-transitory computer-readable medium as described in claim 13, wherein the instructions for causing the media guidance application to output a representation of content causes the media guidance application to output representations of late night talk shows, daytime talk shows, children's programming, or newly-broadcast content.

16. The non-transitory computer-readable medium as described in claim 13, wherein the representation of the content is selectable to cause the content to be recorded.

17. The non-transitory computer-readable medium as described in claim 13, wherein the representation is of a media asset and is selectable to store a series that includes the media asset.

18. The non-transitory computer-readable medium as described in claim 17, wherein the selection of the series is configured to cause a media asset that is not currently represented by the media guidance application to be stored.

19. A system comprising:

a client device comprising a processor configured to:

determine hardware and software content capabilities of the client device;

output a representation of content that is available via a plurality of different sources at a same time;

select, in response to a user selection of the representation, one of the plurality of different sources to be used to obtain the content, wherein the selecting is based at least in part on the determined capabilities of the client device and availability of the plurality of different sources when the user selection is received; and

responsive to a particular source becoming available, automatically access to the particular source when it becomes available.

20. A system as described in claim 19, wherein the processor is configured to determine the hardware and software content capabilities of the client device by querying a driver.

21. A system as described in claim 19, wherein the plurality of different sources includes different channels from a head end.

22. A system as described in claim 19, wherein the processor is configured to determine the hardware and software content capabilities of the client device by locating a preconfigured identifier that indicates the capabilities of the client device.

23. A system as described in claim 19, wherein the content is available via standard definition and high definition.

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